2.1.6 Visual / Aesthetics

The *Visual Impact Assessment* (CirclePoint, June 2005) for the Caldecott Improvement Project was conducted in accordance with guidelines provided in the *FHWA Approach to Visual Assessment of Highway Projects* (FHWA, 1986). In addition, the Department's Office of Landscape Architecture prepared the *Visual Impact Assessment Addendum* in September 2005. The visual analysis characterizes the project area in terms of "landscape units," which are distinct segments of the corridor that have a consistent or cohesive visual or physical character, and identifies visual quality, prominent features, and scenic resources within the landscape units. Selected viewpoints along the State Route 24 scenic highway where the project could affect existing visual quality are identified and evaluated. In addition, physical changes attributable to the proposed project that would cause changes to views currently experienced by residents, motorists, and other users of the area are evaluated. Avoidance, minimization and compensation measures to address visual effects are described in Section 2.1.6.4.

2.1.6.1 REGULATORY SETTING

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government uses all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, the FHWA in its implementation of NEPA [23 U.S. C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest, taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities." [CA Public Resources Code Section 21001(b)]

2.1.6.2 AFFECTED ENVIRONMENT

The existing visual conditions in the project area consist of visual resources (described in terms of visual character and quality), the characteristics of viewers, namely viewer exposure (the ability to see the project area), and viewer sensitivity.

Existing Visual Character and Context

The visual character of the San Francisco Bay region is a composite of urban and suburban development within and around mountains, open space and water. The Caldecott Tunnel is located at the base of the Berkeley Hills, which separate the metropolitan centers of Oakland and Berkeley from the more suburban and rural areas of Contra Costa County. Above and to the east of the Caldecott Tunnel are large areas of open space that make this area popular for recreational users, including bicyclists and hikers.

Motorists traveling within the corridor have a wide variety of visual experiences. When traveling eastbound on State Route 24 from Oakland, it is evident that the viewer is leaving the urban environment of Oakland and the inner Bay Area, and entering a more suburban and rural setting in Contra Costa County. This view transition is gradual, however, as the corridor provides a progression of visual character from the developed, urban areas of North Oakland and South Berkeley to the more densely vegetated and sparsely developed areas of the Oakland Hills. Motorists enter the existing bores, which are lit from inside, and exit the tunnel in a rural, woodsy area from a point at which the

only man-made development visible is the roadway itself, among densely vegetated patches of woodland and graded hillsides.

Motorists approaching the tunnel in the westbound direction on State Route 24 travel through the suburban and rural landscape of the Contra Costa communities of Lafayette and Orinda. Approaching the Caldecott Tunnel, the area becomes characterized by dense vegetation and steep hillsides along State Route 24. Much of this area is within the Sibley Volcanic Regional Preserve. At the tunnel portals, some man-made elements other than the highway become visible such as access roads and the tunnel portals. The portals are historic in character, as two of the existing three portals were constructed in 1937 and exhibit a unique Art Deco architectural character. Upon exiting the tunnel through the westbound portal, it is apparent that the motorist is leaving a rural, rolling hillside setting and entering a more urbanized and developed area. After traveling 0.8 kilometer (0.5 mile) from the westbound tunnel portal, motorists have views of Downtown Oakland, and in the distance, San Francisco, the San Francisco Bay, and the Oakland Bay Bridge. The panoramic view of the inner Bay Area is framed by dense residential development on both sides of State Route 24, and patches of mature trees that dot the surrounding hills.

Existing Visual Image Types and Viewer Groups

For the purposes of the visual impact assessment, the study area was subdivided into two landscape units that encompass distinct spatial areas. Each landscape unit has a distinct visual character based upon the land uses and features that comprise it. These smaller scale land uses or features within each landscape unit are called "image types." Five image types are located within the project area: wooded hillsides, graded hillsides, tunnel entrance, hillside residential, and hillside access roads.

"Viewer groups" are groups of people who regularly travel through the project area, or who have a certain degree of sensitivity to changes in the visual environment. Viewer groups may be present in some landscape units and not in others, as land uses and travel patterns may vary among landscape units within a project area. Three viewer groups were identified within the Caldecott Improvement Project area: 1) motorists who use the Caldecott Tunnel via State Route 24 to commute to and from points within the East Bay area; 2) recreational users who use the nearby recreational areas, as well as bicyclists and bicycle groups who tour along the surrounding roads and hills; and 3) residents living on the west side of the Caldecott Tunnel who have views of State Route 24 and, in some cases, the northbound tunnel portals on the west side of the Caldecott Tunnel.

Landscape Units

Landscape units are geographically discrete areas that are often separated by natural features such as bodies of water, ridges, or changes in vegetation. The Caldecott Tunnel separates two distinct spatial areas; therefore, two landscape units were identified for the purposes of the visual impact assessment: the West of the Tunnel Landscape Unit (LU) and the East of the Tunnel Landscape Unit (LU), as shown in Figure 2.1.6-1. The existing visual quality of the landscape units, including image types within each landscape unit and viewer groups with a degree of sensitivity to the visual environment are described below.

West of the Tunnel LU: The West of the Tunnel LU begins at the west tunnel portals and extends to the State Route 24/Broadway Interchange. Motorists, residents, and recreational users (including bicyclists and hikers) are the primary viewer groups in this landscape unit. Facing east toward the tunnel, the dominant visual elements are wooded hillsides, residences, State Route 24, access roads, and the tunnel entrances. The tunnel entrances, made of concrete with Art Deco design elements, provide vividness within the landscape unit that reflects the period in which they were built (1937). Facing west away from the tunnel, the dominant visual elements are wooded hillsides, residences, and

access roads. The views immediately exiting the tunnel in the westbound direction are limited by the steep hillsides that line the State Route 24 corridor. Further west, views open to the urban areas of North Oakland and South Berkeley with Emeryville and San Francisco Bay visible in the distance.

East of the Tunnel LU: The East of the Tunnel LU begins at the east tunnel portals and ends at the Camino Pablo Interchange on State Route 24. Motorists and bicyclists are the primary viewer groups in this landscape unit. Residences within this landscape unit are primarily located closer to the Camino Pablo Interchange, and residents have limited views of the highway due to distance, topography or dense vegetation. Most of this landscape unit is relatively undeveloped. Graded and wooded hills dominate the roadside views in areas closest to the tunnel portals. State Route 24, access roads, some utilities and the portal structures are the primary man-made image types.

Existing Visual Quality

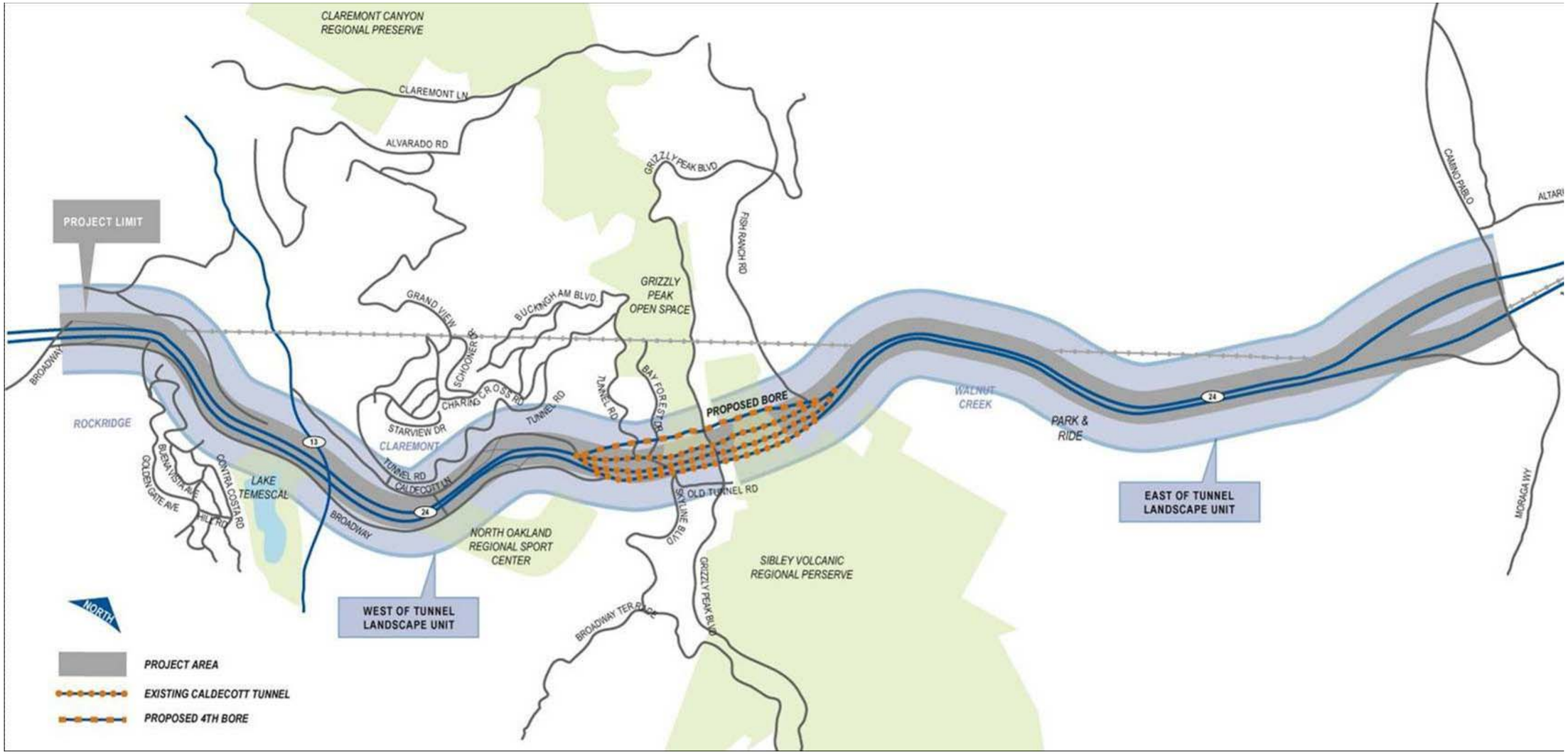
Key viewpoints, as shown in Figure 2.1.6-2, were identified to represent the visual character of the landscape units and used to define visual quality. The existing visual quality for each of the landscape units was evaluated based on indicators of the level of visual relationships, rather than judgments of physical landscape components. This approach provides a set of three evaluative criteria: vividness, intactness, and unity. These criteria are defined as follows:

- **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. An example within the study area is the distinctive relationship of residences and the hillside observed from the existing Caldecott Tunnel;

- **Intactness** is the visual integrity of the natural and man-made landscape of the immediate environs and its freedom from encroaching elements. An example within the study area is the hillside area east of the tunnel, which is a natural area with few man-made features; and

- **Unity** is the visual coherence and compositional harmony of the viewshed. The viewshed entails all natural and man-made features found within the normal view range. In man-altered landscapes, it frequently attests to the careful design or fit of individual components in the landscape. An example is the way man-made elements, such as the tunnel entrance, combine with natural features, such as the hillside landscaping, to provide a coherent visage unique to the area.

Figure 2.1.6-1 Landscape Units



*Not to Scale

Key Viewpoints

The key viewpoints are typical views that people would have of or from the project, as described below.

Viewpoint 1

This viewpoint is located on Tunnel Road in the West of the Tunnel LU, as shown in Figure 2.1.6-3. The view is looking east at the Caldecott Tunnel entrances and single- and multi-family residences on the hillside. Mid-slope residents, motorists and recreational bicyclists who use the surrounding access roads are the primary viewer groups in this area.

Viewpoint 2

This viewpoint is looking east from Hiller Drive in the West of the Tunnel LU, as shown in Figure 2.1.6-4. The view includes State Route 24, the tunnel portals, wooded hillsides and single-family hillside residences and multi-family residences located on Caldecott Lane. Upper-slope residents and motorists and recreational bicyclists on local access roads are the primary viewer groups in this area.

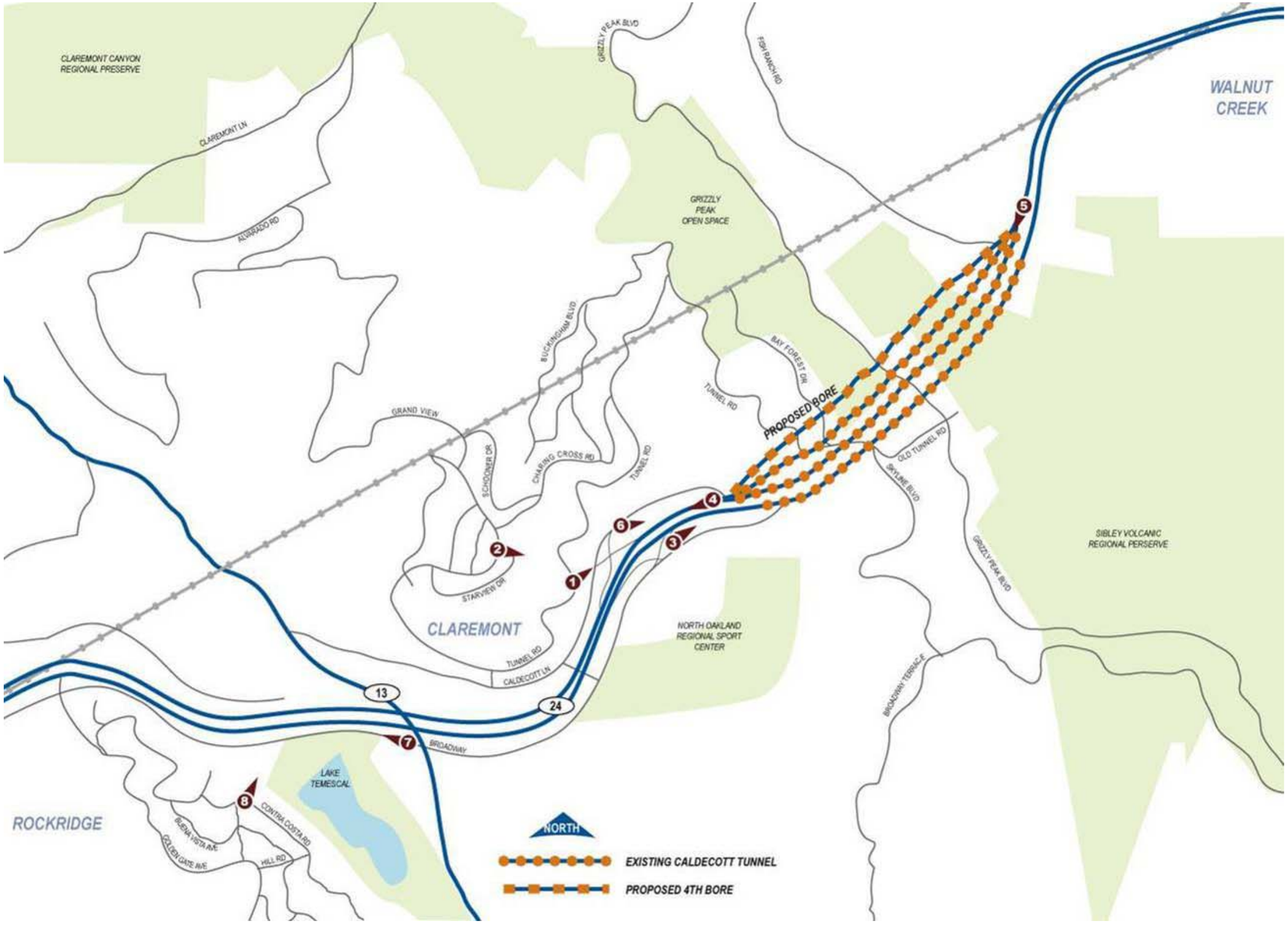
Viewpoint 3

This viewpoint is located on State Route 24 in the West of the Tunnel LU. The view is looking east from the Broadway on-ramp to one of the tunnel entrances, as shown in Figure 2.1.6-5. The view includes State Route 24, the tunnel entrance, hillside access roads, single-family hillside residences, and wooded hillsides. Motorists traveling east on State Route 24 are the primary viewer group in this area.

Viewpoint 4

This viewpoint is located where State Route 24 would exit the new bore in the West of the Tunnel LU, looking westward, as shown in Figure 2.1.6-6. The view includes a portion of State Route 24 shoulder area, landscaped areas in the foreground, and wooded hillsides in the distance. Westbound motorists exiting the tunnel portals on State Route 24 are the primary viewer group in this area.

Figure 2.1.6-2 Viewpoint Locations



Viewpoint 5

This viewpoint is located on westbound State Route 24 approaching the eastern portal of the Caldecott Tunnel near the Fish Ranch Road on-ramp, as shown in Figure 2.1.6-7. The view includes State Route 24 and wooded hillsides. Motorists traveling on State Route 24 are the primary view group in this area.

Viewpoint 6

This viewpoint is located on Caldecott Lane, north of State Route 24, looking toward the existing western tunnel portals, as shown in Figure 2.1.6-8. The view includes Caldecott Lane in the foreground, landscaped areas between Caldecott Lane and State Route 24, hillside single-family residences, and distant wooded hillsides. Lower-slope residents (residents of the Park View Condominiums), and motorists and recreational bicyclists on local access roads are the primary viewer groups in this area.

Viewpoint 7

This viewpoint is located on Broadway, south of State Route 24 and just west of the State Route 24/State Route 13 Interchange, as shown in Figure 2.1.6-9. The view, looking west near Lake Temescal, includes State Route 24, Broadway, which is the frontage road to State Route 24, and mature trees located at Lake Temescal. Motorists on local access roads who may be visiting Lake Temescal, and bicyclists that use local access roads for recreation are the primary viewer groups in this area.

Viewpoint 8

This viewpoint is located on Contra Costa Road looking northeast toward State Route 24 and the Hiller Highlands area, as shown in Figure 2.1.6-10. This view includes trees and vegetation associated with Lake Temescal in the foreground, State Route 24 and the off-ramp to State Route 13, wooded hillsides in the distances, and single- and multi-family residents of the Hiller Highlands community at the top of the distant hill. Upper-slope residents, and motorists and recreational bicyclists on local access roads are the primary viewer groups in this area.

Figure 2.1.6-3 Viewpoint 1- Existing view of West Portal from Tunnel Road

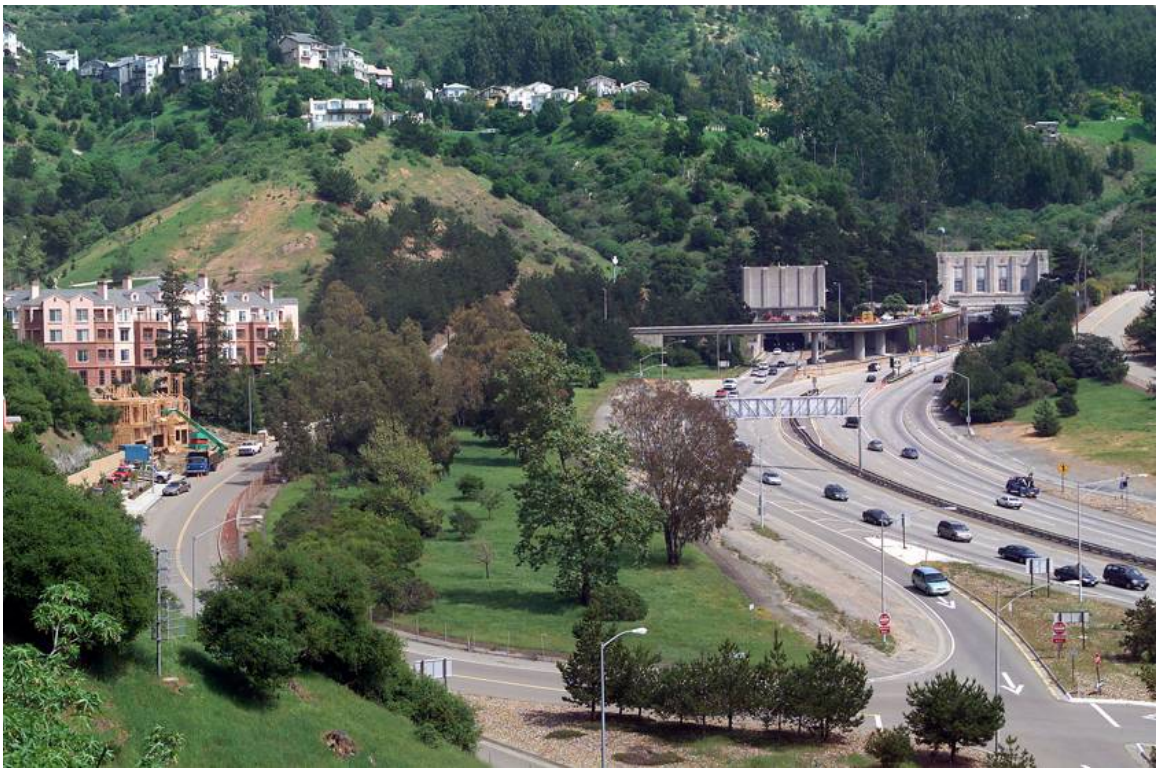


Figure 2.1.6-4 Viewpoint 2- Existing view of West Portal from Hiller Drive

Figure 2.1.6-5 Viewpoint 3- Existing view of West Portal from Broadway On-Ramp

Figure 2.1.6-6 Viewpoint 4- Existing view from the Proposed West Portal

Figure 2.1.6-7 Viewpoint 5- Existing view of East Portal from Fish Ranch Road On-Ramp

Figure 2.1.6-8 Viewpoint 6- Existing view of Caldecott Lane looking towards the proposed West Portal

Figure 2.1.6-9 Viewpoint 7- Existing view from Broadway, north of Lake Temescal, looking west

Figure 2.1.6-10 Viewpoint 8- Existing view of Contra Costa Road, looking northeast toward State Route 24

2.1.6.3 IMPACTS

The following section analyzes the potential visual impacts of the proposed project within the two landscape units that make up the project study area. The methodology used to assess visual impacts combines the two principal visual impact components: visual resource change and viewer response to that change. "Visual resource change" is analyzed in terms of visual dominance and other visual effects of facilities that would be constructed under the proposed project, together with the change in visual quality. "Viewer response" to these changes is interpreted on the basis of the viewer types identified.

Visual Resource Change

Visual changes as a result of the build alternatives in the West of the Tunnel LU and East of the Tunnel LU are described below.

West of the Tunnel Landscape Unit

Alternatives 2N and 3N would result in similar visual changes to this landscape unit. Both build alternatives include a new bore and portal façade north of the existing bores; realignment of the Caldecott Lane on- and off-ramps to standard hook ramps; and retaining walls at the newly-constructed portal along State Route 24. Alternative 3N would include an additional travel lane and a larger tunnel in height and width. Viewer groups that would be affected by changes in the visual setting in this landscape unit include motorists, residents and recreational users.

Motorists: Motorists traveling east on State Route 24 would have views of the new portal facade. Eastbound motorists would not be substantially affected by this view, however, because the new portal façade would be located on the opposite side of the highway and would be designed to match in color and form with the existing facades. Eastbound motorists would also see the proposed soundwall along the south side of State Route 24 near the State Route 13 Interchange if it were constructed. This soundwall could block views of Lake Temescal for some motorists but would not result in view obstruction of the surrounding wooded hillside areas and hillside residences.

The most substantial visual change in this landscape unit for motorists would occur in the immediate vicinity of the new tunnel portal and along the westbound lanes to the Caldecott Lane exit. Immediately adjacent to the new tunnel portal, two retaining walls would be constructed (one on each side of the travel way). On the north side of the portal, a 12-meter (40-foot)-high retaining wall may be built. On the south side, an 8-meter (26-foot)-high retaining wall may be built. These retaining walls would appear to the motorists as logical extensions of the tunnel they have just emerged from. In the area immediately to the west there are two options being considered to address potential noise impacts. Each of these options and their effect on the motorists' view are discussed below.

Option 1 – Soundwall. Under this option, a 4.9-meter (16-foot)-high, 292-meter (958-foot)-long soundwall would be constructed on the north side of State Route 24 from the tunnel exit to the Caldecott Lane off-ramp. To accommodate the construction of the tunnel, soundwall, and staging activities, all of the mature vegetation would be removed in the area bounded by State Route 24, Caldecott Lane, and the Caldecott Lane off-ramp, except for a small strip adjacent to Caldecott Lane that would be retained to provide some visual screening. The view for motorists exiting the tunnel in the westbound direction would change from a view of grass and mature trees in the immediate foreground to views of a soundwall. The wall would appear as a logical extension of the tunnel and retaining walls in this area. The visual change for motorists would be considered minimally adverse. Figure 2.1.6-11 shows Option 1 in plan view and cross-section in the Caldecott Lane area.

Option 2-Berm/Soundwall. Under this option, a 6-meter (19-foot)-high berm would be constructed between State Route 24 and Caldecott Lane with a 2.4-meter (8-foot)-high soundwall on top to

provide noise mitigation. To construct the berm, all of the vegetation in this area would be removed during construction. The berm and soundwall would provide visual screening of the adjacent multi-family residences in this area (Parkview Condominiums). This option would have less impact on motorists than Option 1 because after revegetating the berm, motorists would have similar foreground views as they do today (grasses, trees and shrubs). Figure 2.1.6-12 shows a plan view and cross-section of Option 2 in the Caldecott Lane area.

Option 3-Berm. A second berm would be constructed immediately west of the Caldecott Lane hook ramp. It would have the same general appearance and serve the same purpose as the other berm, but would not include a soundwall. The second berm would screen views of the frontage road from State Route 24 and views of State Route 24 from residential properties that are currently being developed at this location. Like the other berm, the second berm would be landscaped according to Caltrans standards and is expected to be a positive visual element that will help improve the appearance of the highway corridor in this area.

Residents: Vegetation removal and construction of the new tunnel entrance, retaining walls and soundwalls would have varying degrees of effect on residents. Upper- and mid-slope residents located north and south of State Route 24 would see visual changes (new tunnel portal, retaining walls and soundwalls). However, due to their distance from the project area, their sensitivity to these changes would be low to moderate. Lower-slope residents, particularly residents on Caldecott Lane, have the potential to be the most directly affected by the project. For these residents, changes occurring along the westbound lanes of State Route 24 between the new tunnel portal and Caldecott Lane have the most potential to create adverse visual effects. Each of the options for this area and their potential visual impact on lower-slope residents is discussed below.

Option 1–Soundwall. Under this option lower-slope and ground plane residents would experience the loss of existing vegetation and the construction of a 4.9-meter (16-foot) high soundwall. The soundwall would provide some visual screening for lower-slope residents, but it would not be as effective as the existing mature vegetation.

Option 2 - Berm/Soundwall. Under the Berm/Soundwall Option lower-slope residents would be provided a more effective visual screen than under Option 1.

Figure 2.1.6-11 Cross Section and Plan View of Option 1: Soundwall

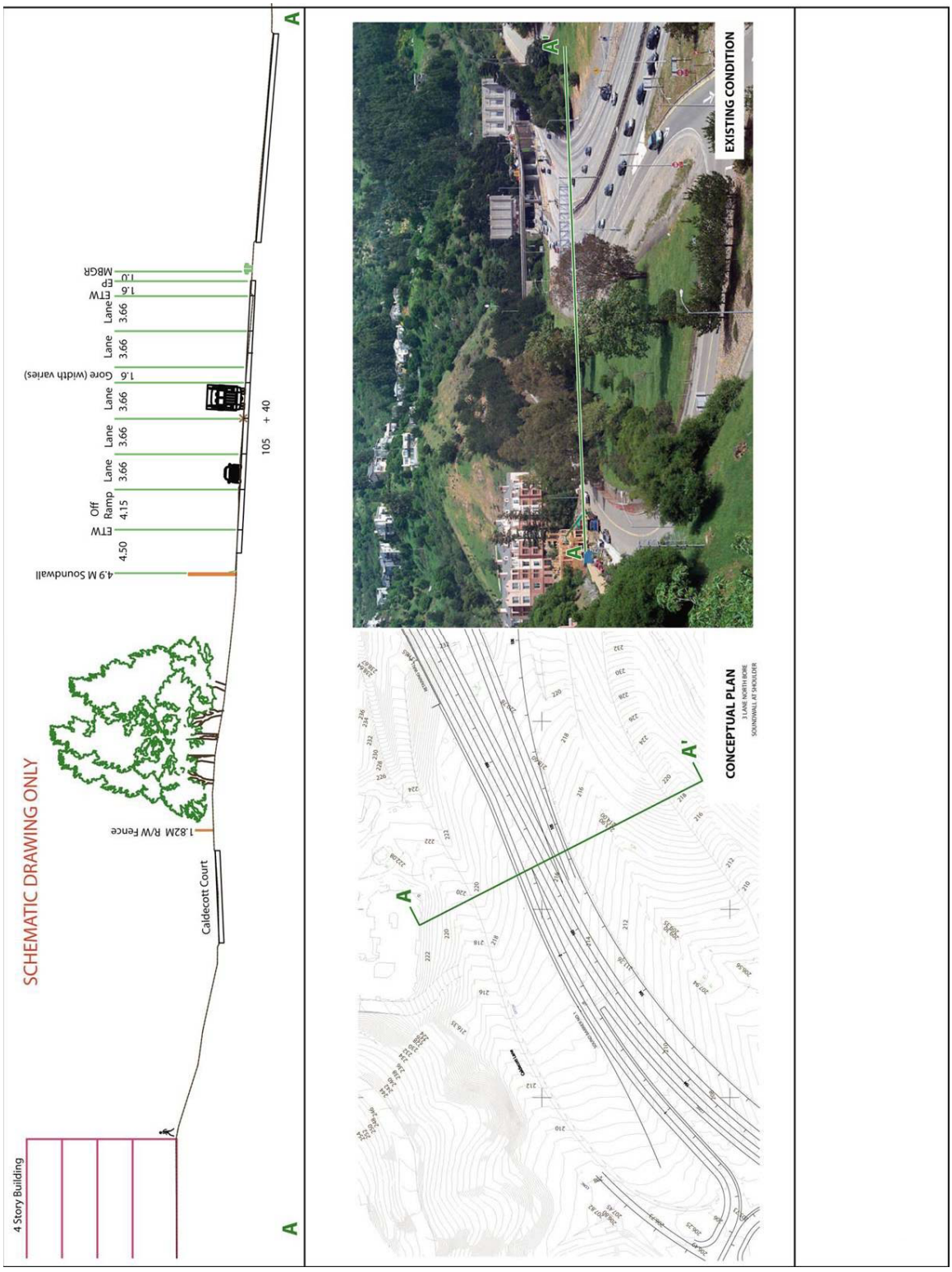
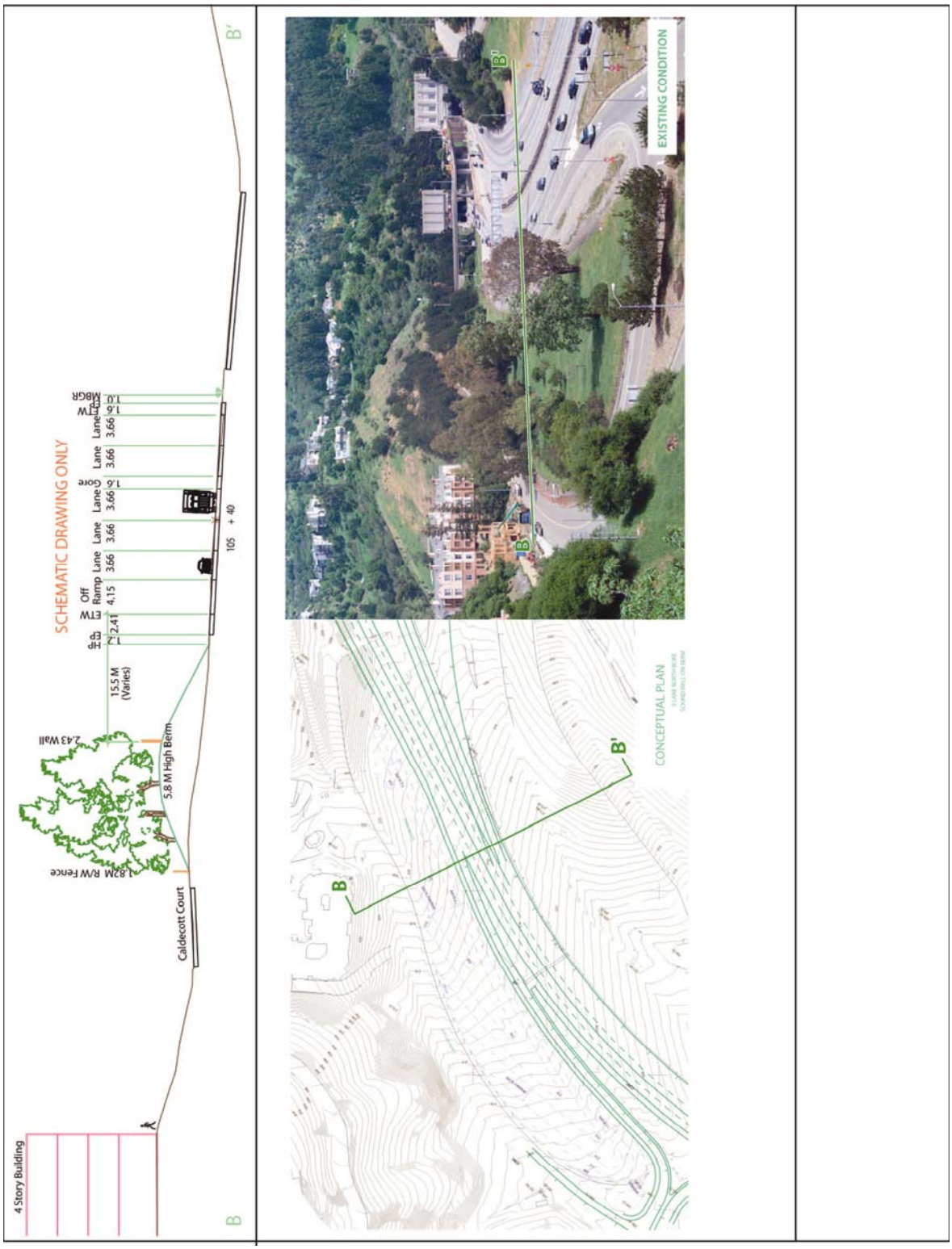


Figure 2.1.6-12 Cross Section and Plan View of Option 2: Berm/Soundwall



Recreational Users: Bicyclists typically ride on mid- and upper-slope access roads and trails, which, given the distance to the Caldecott facilities, would reduce their sensitivity to visual changes. The primary visual changes in the project area (tunnel portal, retaining walls and soundwalls) would occur in areas fairly distant from most routes used by recreational bicyclists. The soundwall, if constructed along State Route 24 in the vicinity of Lake Temescal, is the exception. Broadway in this area is frequently used by recreational cyclists who would be exposed to the new soundwall. The effect on bicyclists' views would be negligible, however, because bicyclists in this area already have exposure to large retaining walls associated with State Route 24 and State Route 13. As a result, the new soundwall would not result in a substantial visual change for these users. Other recreational users such as those at Lake Temescal would have some visual exposure to the new soundwall on State Route 24, which would minimally obstruct views across the highway but would also obstruct views of vehicular traffic, resulting in a beneficial effect for park users.

East of the Tunnel Landscape Unit

Alternatives 2N and 3N would result in similar visual changes to this landscape unit. All construction activities would occur along the north side of State Route 24. Both build alternatives would involve the removal of vegetation to construct a new tunnel entrance structure and widen State Route 24 near the Fish Ranch Road off-ramp as it approaches the eastern portal of the tunnel. Under both build alternatives, two retaining walls would be constructed, one on each side of the westbound travel way as the roadway approaches the new tunnel entrance. On the north side of the portal, a 2.39-meter (7.84-foot) to 8.41-meter (27.59-foot)-high retaining wall would be built. On the south side, a 0.52-meter (1.71-foot) to 6.81-meter (23.34-foot)-high retaining wall would be built. These walls would introduce substantial new man-made features into this landscape unit. Construction of these retaining walls would also require grading and removal of vegetation. The visual changes created by these walls would primarily affect motorists on State Route 24.

Motorists: Motorists traveling westbound would have visual exposure to the new tunnel entrance portal. This would not be considered a substantial change because the portal would appear similar to the existing portals. The new retaining walls would introduce a new visual feature and be highly visible to motorists; however, they would not block views or be out of character with the existing freeway corridor.

Vegetation removal would occur to accommodate the new portal and additional lanes. Most of this vegetation loss would occur near the new portal. For motorists traveling toward the portal, the façade is the dominant visual element, and motorists are typically less visually sensitive than other viewer groups. The loss of vegetation would result in only a slightly adverse impact to motorists.

Visual Changes and Effect on Viewer Groups

The following section discusses the impacts of each alternative at each of the eight viewpoints.

Viewpoint 1

The existing view of the west portal from Tunnel Road is shown in Figure 2.1.6-3. As shown in Figures 2.1.6-13 and 2.1.6-14, Alternatives 2N and 3N with Option 1 – Soundwall would introduce a new tunnel portal structure, widened State Route 24 and new soundwall into the visual setting from Viewpoint 1. Option 2 - Berm/Soundwall would introduce the same project elements into the visual landscape but as an alternative to the soundwall in Option 1, a berm with a shorter soundwall would be constructed in the area along Caldecott Lane, as shown in Figures 2.1.6-15 and 2.1.6-16. The berm/soundwall combination would provide better sound and visual screening for residents along Caldecott Lane. Construction of the berm/soundwall would require the initial removal of more

vegetation than under Option 1, affecting views of mid-slope residents for the 10 to 15 years before re-establishment of vegetation. Both options would result in minimally adverse effects to the overall visual quality of the view for mid-slope residents. The perception of the visual changes for recreational bicyclists would be even less due to the reduced time of exposure as compared to residents.

Figure 2.1.6-13 Viewpoint 1 (Option 1)

(Simulated condition showing view of West Portal from Tunnel Road immediately following construction-Alternative 2N)

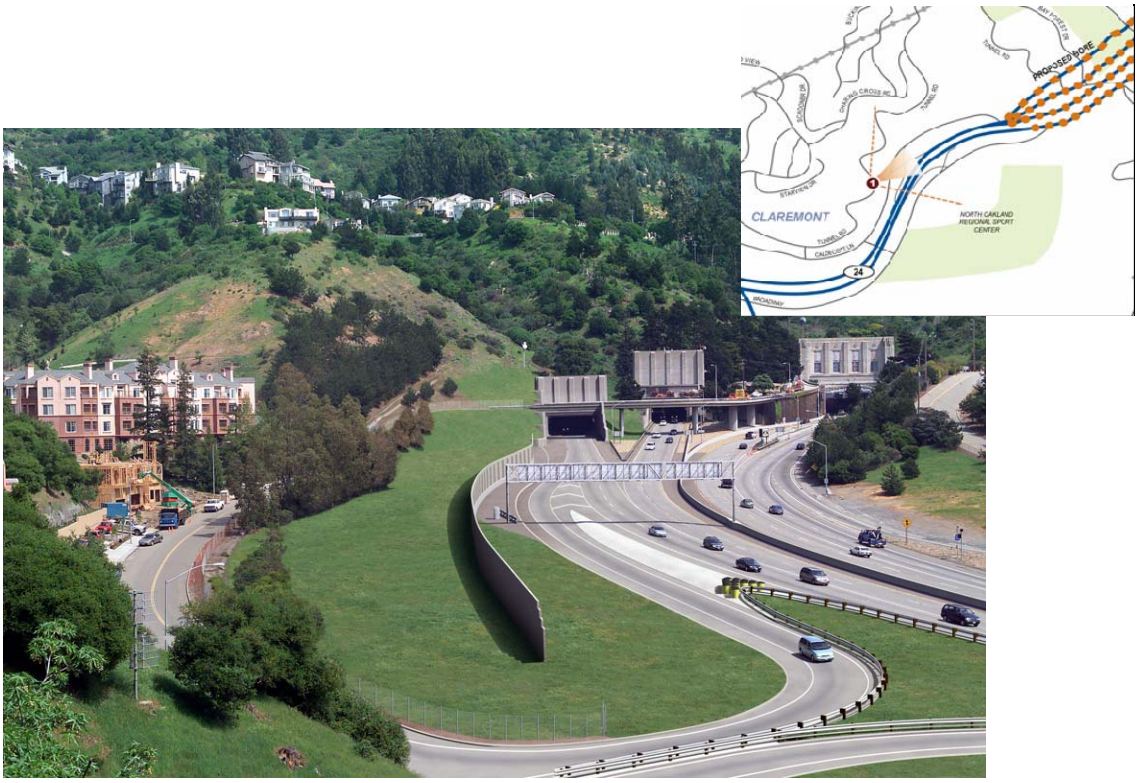


Figure 2.1.6-14 Viewpoint 1 (Option 1)

(Simulated condition showing re-establishment of vegetation at 10-15 years-Alternative 3N)

Figure 2.1.6-15 Viewpoint 1 (Option 2)

(Simulated condition showing view of West Portal from Tunnel Road immediately following construction-Alternative 3N)

Figure 2.1.6-16 Viewpoint 1 (Option 2)

(Simulated condition showing re-establishment of vegetation at 10-15 years-Alternative 3N)

Viewpoint 2

The existing view of the west portal from Hiller Drive is shown in Figure 2.1.6-4. From Viewpoint 2, both build alternatives would result in similar changes to the visual setting; they would introduce a new tunnel portal structure, widen State Route 24 and remove vegetation around the new portal area and along Caldecott Lane during construction, as shown in Figures 2.1.6-17 to 2.1.6-20. The addition of the new portal and travel lanes would be visible from this view; however, the roadway and tunnel improvements would not detract from the overall visual quality because of the distance and elevation of the observer viewpoint. In addition, many of the residents responding to the visual preference survey indicated that one of the biggest visual detractors to their views is the back-up of cars on State Route 24 during peak commute periods, which is quite visible from upper-slope areas. With the project, these backups should be reduced, resulting in a minimally beneficial effect on the overall visual quality for upper-slope residents.

Figure 2.1.6-17 Viewpoint 2 (Option 1)

Simulated condition showing view of West Portal from Hiller Drive immediately following construction)

Figure 2.1.6-18 Viewpoint 2 (Option 1)

(Simulated condition showing re-establishment of vegetation at 10-15 years.)

Figure 2.1.6-19 Viewpoint 2 (Option 2)

(Simulated condition showing view of West Portal from Hiller Drive immediately following construction)

Figure 2.1.6-20 Viewpoint 2 (Option 2)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Viewpoint 3

The existing view of the west portal from the Broadway on-ramp is shown in Figure 2.1.6-5. Both build alternatives would introduce similar elements into the visual setting at Viewpoint 3, including the new tunnel portal structure and widened State Route 24, and would require the removal of vegetation during construction. Option 1 – Soundwall and Option 2 – Berm/Soundwall would also affect views to some extent, as shown in Figures 2.1.6-21 to 2.1.6-24. Given that motorists are less sensitive to visual change than other viewer groups, combined with the medium overall visual quality of the existing setting, the project would result in a negligible effect on overall visual quality.

Figure 2.1.6-21 Viewpoint 3 (Option 1)

(Simulated condition showing view of West Portal from Broadway On-Ramp immediately following construction)

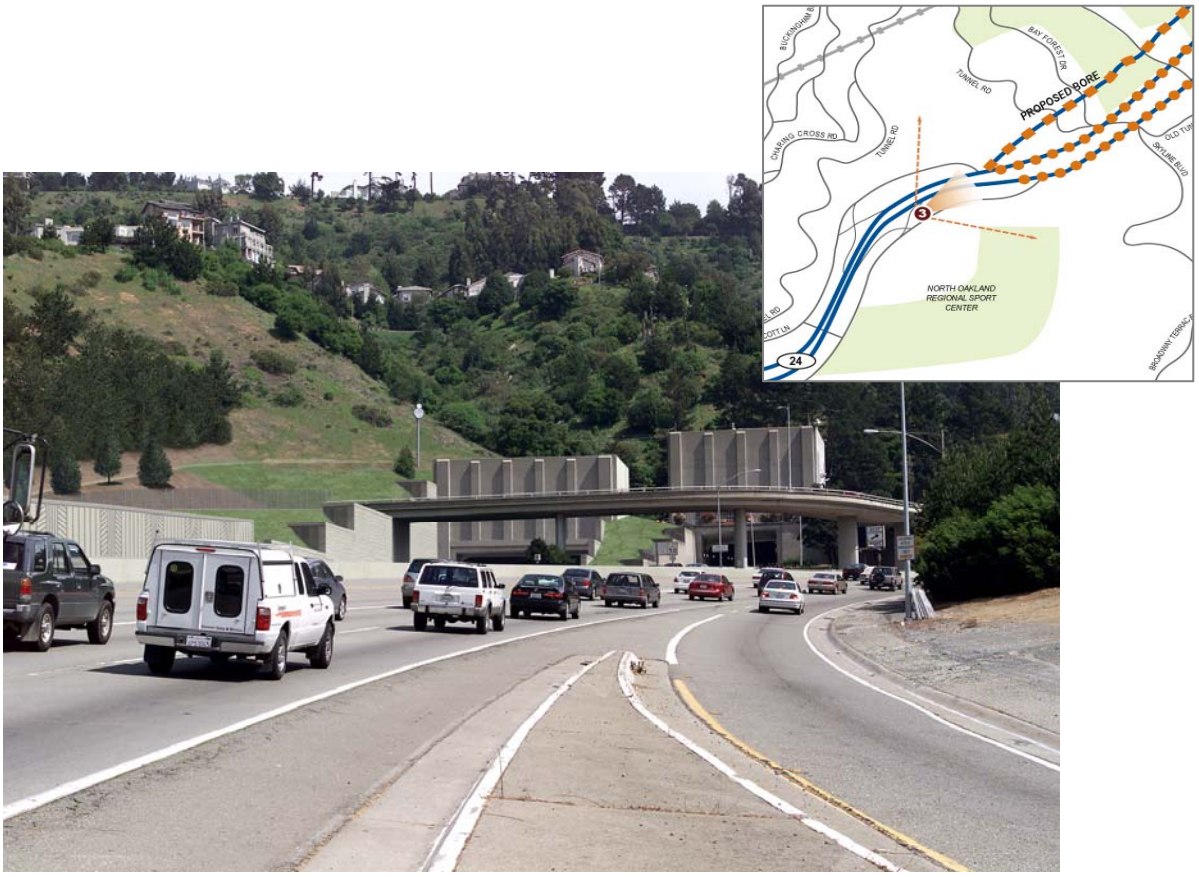


Figure 2.1.6-22 Viewpoint 3 (Option 1)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Figure 2.1.6-23 Viewpoint 3 (Option 2)

(Simulated condition showing view of West Portal from Broadway On-Ramp immediately following construction)

Figure 2.1.6-24 Viewpoint 3 (Option 2)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Viewpoint 4

The existing view from the proposed west portal is shown in Figure 2.1.6-6. Under Option 1 – Soundwall, both build alternatives would result in several changes to the landscape from Viewpoint 4, including a widened State Route 24, a 45-meter (148-foot) - long, 12-meter (40-foot) – high retaining wall along the westbound shoulder at the tunnel exit, a new 275-meter (900-foot) - long, 4.9-meter (16-foot) - high soundwall along the shoulder of the westbound lanes to reduce noise levels, and the removal of vegetation. Given that motorists are less sensitive to visual change than other viewer groups, combined with the medium overall visual quality of the existing setting, the project would result in only a minimally adverse effect on overall visual quality. Visual simulations depicting Alternative 3N with Option 1 – Soundwall are shown in Figures 2.1.6-25 and 2.1.6-26.

Option 2 – Berm/Soundwall would introduce similar elements into the visual landscape as described above. Instead of a soundwall, however, an earthen berm with a soundwall on top would be constructed along the westbound shoulder of State Route 24, between the off-ramp and Caldecott Lane. This option would still require the removal of vegetation between State Route 24 and Caldecott Lane, but the earthen berm would be planted with shrubs and trees. The berm would provide better unity with surrounding wooded hillsides and would improve overall visual quality. Visual simulations depicting Alternative 3N with Option 2 – Berm/Soundwall are shown in Figures 2.1.6-27 and 2.1.6-28.

Figure 2.1.6-25 Viewpoint 4 (Option 1)

(Simulated condition showing westward view from the proposed West Portal immediately following construction)

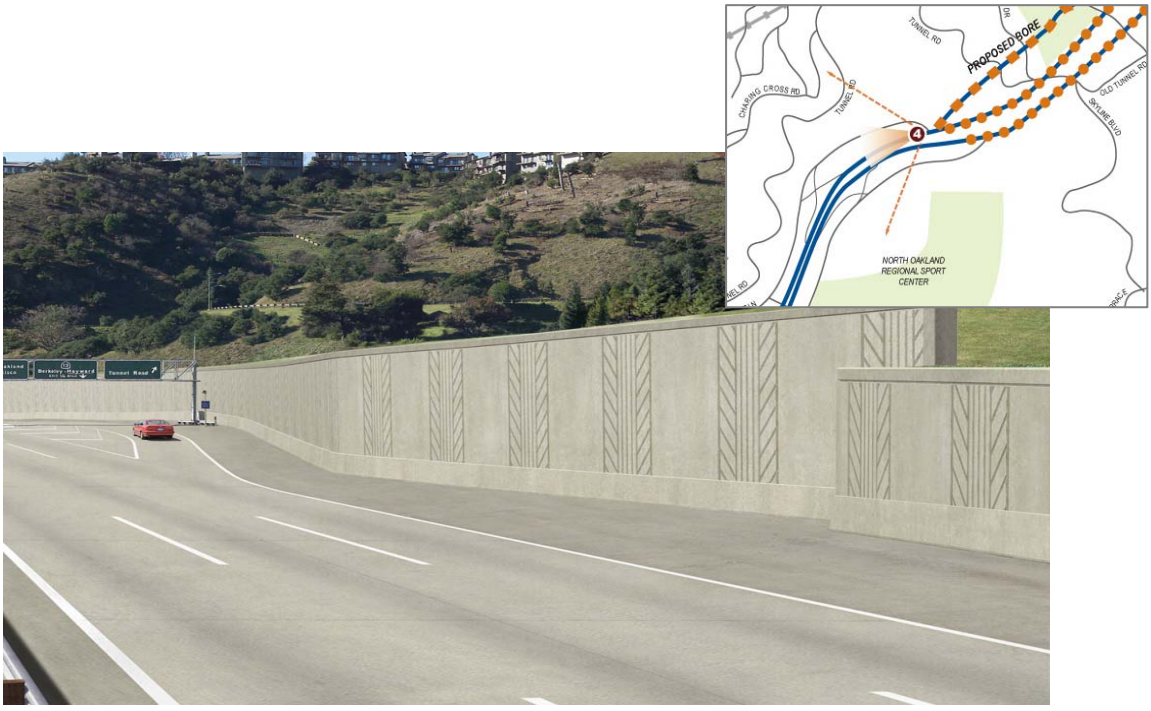


Figure 2.1.6-26 Viewpoint 4 (Option 1)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Figure 2.1.6-27 Viewpoint 4 (Option 2)

(Simulated condition showing westward view from the proposed West Portal immediately following construction)

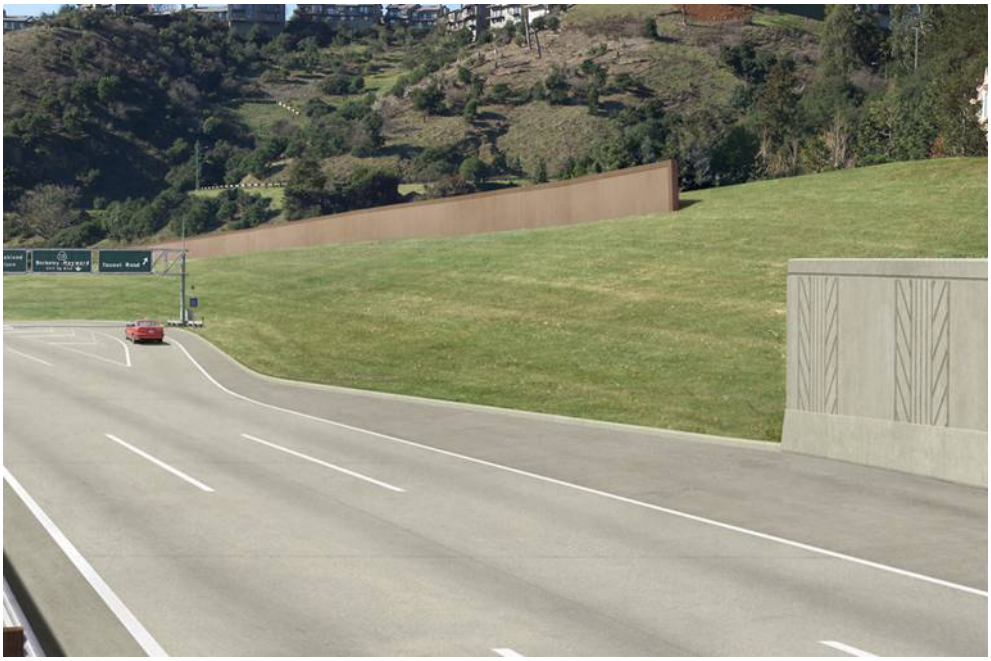


Figure 2.1.6-28 Viewpoint 4 (Option 2)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Viewpoint 5

The existing view from the Fish Ranch Road on-ramp to the east portal is shown in Figure 2.1.6-7. Both build alternatives would introduce new elements into the view from Viewpoint 5, including a widened State Route 24 and on-ramp from Fish Ranch Road, as shown in Figures 2.1.9-29 and 2.1.6-30. A retaining wall and the new tunnel portal would be partially visible. The project would also result in the removal of vegetation in this area during construction. Introduction of a retaining wall and removal of vegetation during construction would result in a minimal adverse effect on overall visual quality. Motorists would be exposed to these visual changes for a relatively short duration, and therefore, would be only moderately sensitive to them.

Figure 2.1.6-29 Viewpoint 5

(Simulated condition showing view of East Portal from Fish Ranch Road On-Ramp immediately following construction.)

Figure 2.1.6-30 Viewpoint 5

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Viewpoint 6

The existing view from Caldecott Lane, looking towards the proposed west portal is shown in Figure 2.1.6-7. Two options for mitigating noise impacts would introduce new elements into the view from Viewpoint 6 under both build alternatives. Option 1- with Soundwall would result in the removal of most of the mature landscaping in the foreground with the exception of a thin strip along the south side of Caldecott Lane. A new soundwall would be constructed along the north side of State Route 24, and with the vegetation removal during construction, the new wall would be highly visible to lower slope residents. Visual simulations depicting Alternative 3N with Option 1 – Soundwall are shown in Figures 2.1.6-31 and 2.1.6-32. Option 2 - Berm/Soundwall would have similar effects, however, instead of constructing only a soundwall, the build alternatives would include a combined berm and soundwall in the area between Caldecott Lane and State Route 24 resulting in a lesser overall visual change. Visual simulations depicting Alternative 3N with Option 2 – Berm/Soundwall are shown in Figures 2.1.6-33 and 2.1.6-34. With the removal of vegetation during construction, the new tunnel portal and new berm and soundwall would be visible to lower-slope residents for the 10 to 15 years before re-establishment of vegetation. This would result in a minimally adverse effect on area residents because of the creation of views to State Route 24 and reduced privacy for upper story residents. After the vegetation has matured, the effect would actually be minimally beneficial, as the privacy and rural feel of the view would be enhanced.

Figure 2.1.6-31 Viewpoint 6 (Option 1)

(Simulated condition showing view from Caldecott Lane, looking towards the proposed West Portal, immediately following construction)

Figure 2.1.6-32 Viewpoint 6 (Option 1)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Figure 2.1.6-33 Viewpoint 6 (Option 2)

(Simulated condition showing view from Caldecott Lane, looking towards the proposed West Portal, immediately following construction)

Figure 2.1.6-34 Viewpoint 6 (Option 2)

(Simulated condition showing re-establishment of vegetation at 10-15 years)

Viewpoint 7

The existing view from Broadway, north of Lake Temescal, looking west is shown in Figure 2.1.6-9. As shown in Viewpoint 7 (Figure 2.1.6-35), the build alternatives could construct two new 3.7-meter (12-foot)-high soundwalls along State Route 24 and the off-ramp to State Route 13. The soundwalls along the off-ramp to State Route 24 would be constructed on top of the two existing retaining walls. The southwest length of the existing retaining wall on the south side of the ramp is 100 meters (328.08 feet). This portion of the south retaining wall varies in height from 7.2 meters (23.78 feet) to 6.62 meters (21.73 feet). The soundwall length of the existing retaining wall on the north side of the ramp is 150 meters (492 feet). This portion of the north retaining wall varies in height from 1.07 meters (3.5 feet) to 6.85 meters (22.49 feet). From this viewpoint, and given the extent of hardscape in the existing view, the project would have a negligible effect on overall visual quality and character. Construction of the soundwalls would improve privacy and block views of motorists on State Route 24 and the off-ramp to State Route 13 for motorists and recreational users along Broadway, resulting in a minimal beneficial effect on these viewer groups.

Figure 2.1.6-35 Viewpoint 7

(Simulated condition showing view from Broadway, north of Lake Temescal, looking west, immediately following construction)

Viewpoint 8

The existing view of Contra Costa Road, looking northeast toward State Route 24 is shown in Figure 2.1.6-10. Both build alternatives may introduce a new soundwall along the eastbound shoulder of State Route 24, as shown in Viewpoint 8 (Figure 2.1.6-36). Residents typically have a relatively high sensitivity to visual change; however, this is reduced for upper-slope residents because of their distance from State Route 24. Motorists represented by this view would be on local access roads. Because of the relatively long distance and short duration of view exposure, motorists would have low sensitivity to these visual changes. Bicyclists on local access roads would also have a moderate sensitivity to these changes because of the distance and type of activity. Given the distance, viewing angle and minimal new elements introduced into the visual setting, the project would result in a negligible effect on the overall visual quality from this viewpoint.

Figure 2.1.6-36 Viewpoint 8

(Simulated condition showing view from Contra Costa Road, looking northeast toward State Route 24)

2.1.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Avoidance, minimization and mitigation measures would be implemented in accordance with the Department's standards and recommendations for visual impacts, as suggested by the Department's Highway Design Manual. These measures include:

- Vines and/or shrubs would be planted to cover or completely screen views of new soundwalls and retaining walls constructed as part of this project;
- Soundwalls and retaining walls would be designed with Art Deco features to compliment;
- the existing and new tunnel portal structures;
- Soundwalls would be designed with surface texture and stain to enhance the rural character of the corridor to blend with existing facilities;
- Areas where vegetation is removed for project construction shall be revegetated with similar types of tree and shrub species. Areas of particular concern for revegetation include the hillsides surrounding the new tunnel portal and the area between State Route 24 and Caldecott Lane; and
- Existing oak trees in areas affected by project construction shall be replaced with No. 15 (15-gal) size oak trees of same or approved species at a 3:1 ratio.

Implementation of these mitigation measures would reduce the adverse visual effects of the build alternatives.

2.1.6.5 CONSISTENCY WITH SCENIC/VISUAL RESOURCE PLANS AND POLICIES

The General Plans for Alameda and Contra Costa counties and the cities of Oakland, Orinda and Berkeley set forth scenic/visual resource goals and policies intended to preserve, enhance, restore and respect scenic vistas and visually important landscapes in each jurisdiction. The proposed project would be generally consistent with relevant scenic/visual resources policies, or mitigation would be applied to make it consistent.

2.1.7 Cultural Resources

The information presented in this section is taken from the technical reports, *Historic Property Survey Report* (Jones and Stokes, 2005) and *A Finding of No Adverse Effect* (Jones and Stokes, 2005).

2.1.7.1 REGULATORY SETTING

"Cultural resources" as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include the following:

The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) among the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA incorporates the requirements of the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-

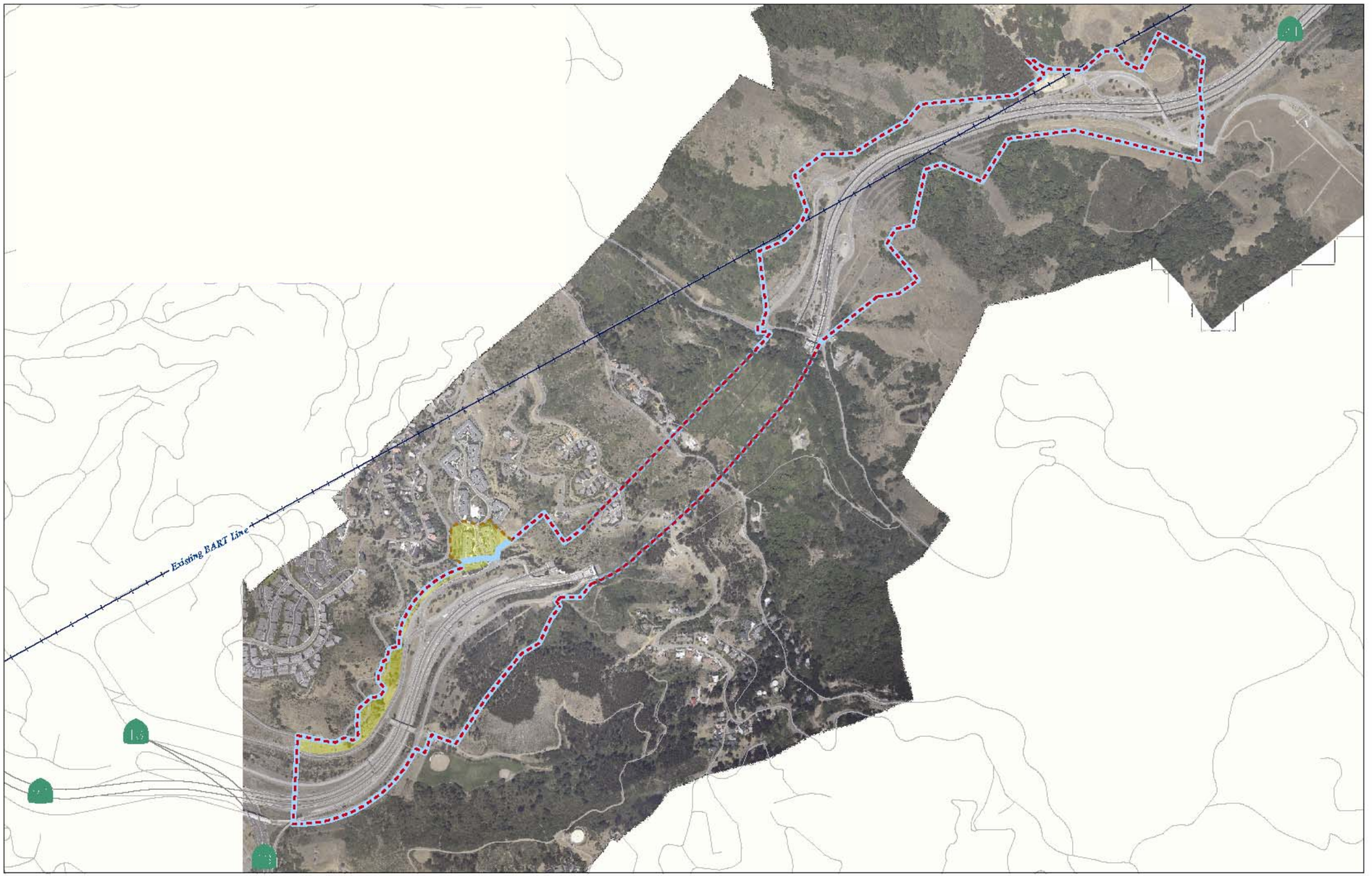
owned resources that meet National Register of Historic Places listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights of way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

2.1.7.2 AFFECTED ENVIRONMENT

A *Historic Property Survey Report* (HPSR), including an *Archaeological Survey Report* (ASR) for this project was completed in January 2005.

The Department's efforts to identify cultural resources were documented in the HPSR. A study area or Area of Potential Effects (APE) for the proposed project was defined and was based on the proposed project footprint and the total right-of-way width (existing and proposed). The archaeological APE encompasses all areas where project-related ground disturbance would occur, including the maximum right-of-way that would be acquired for roadway widening, fill, excavation, construction easements, staging areas, access routes, potential utility relocation, and potential noise barriers (which could include soundwalls, earthen berms, or a combination of berms and walls). The architectural APE (see Figure 2.1.7-1) includes, in addition to the archaeological APE, two parcels adjacent to the roadway right-of-way and on which structures are located. Both the archaeology and architectural history APEs are limited to areas of direct impact where non-state owned parcels are unimproved and contain no buildings or structures. The Caldecott Tunnel extends on an underground easement up to 190 meters (623 feet) below non state-owned lands. The APE does not include these non state-owned lands above the easement.

Figure 2.1.7-1 Area of Potential Effects



Archaeological Resources

The ASR found that no previously recorded archaeological resources were identified within or adjacent to the project area, and no archaeological resources were identified as a result of the field survey. Due to the highly disturbed nature of the APE and the general topography of the APE, including area with steep slopes, there appears to be a low potential for the proposed project to impact buried archaeological resources or for the discovery of new archaeological resources.

Two records searches were conducted for the proposed project, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, located at California State University, Sonoma. The search records housed at the NWIC were specific to the project area and a surrounding 1-mile wide area. The first record search took place on September 21, 2001 and a second search was conducted on May 10, 2004, which also included a 1-mile radius of the project area.

The National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Inventory of Historic Resources (1976), California Historical Landmarks (California Department of Parks and Recreation, 1966), California Points of Historical Interest (May 1992 and updates), historical maps, and secondary historical writings were also consulted.

The National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Inventory of Historic Resources (1976), California Historical Landmarks (California Department of Parks and Recreation, 1966), California Points of Historical Interest (May 1992 and updates), historical maps, and secondary historical writings were also consulted.

The Native American Heritage Commission (NAHC) was contacted on May 12, 2004, with a description and location of the proposed project and requested contact information for Native American representatives who might have interest in the proposed undertaking. A request was also made for NAHC to consult their inventory to determine if any sacred lands were located in or near the project area. A response from NAHC was received on May 20, 2004, indicating that their sacred lands database search was negative. On May 24, 2004 letters were sent to the following Native American contacts based on the list provided by the NAHC:

1. Ms. Ella Rodriguez, Ohlone/Esselen
2. Ms. Irene Zwierlen, Chairperson, Amah/Mutsun Tribal Band
3. Jakki Kehl, Ohlone
4. Katherine Perez, Ohlone/Costanoan/Northern Valley Yokut/Bay Miwok
5. Joseph Mondragon, Tribal Administrator, Amah/Mutsun Tribal Band
6. Melvin Ketchem III, Environmental Coordinator, Amah/Mutsun Tribal Band
7. Michelle Zimmer, Cultural Resources Coordinator, Amah/Mutsun Tribal Band
8. Howard Soto, Ohlone, CNA Cultural Resource
9. Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan
10. Andrew Galvan, The Ohlone Indian Tribe
11. Ramona Garibay, Representative, Trina Marine Ruano Family

Responses were received from Joseph Mondragon and Ann Marie Sayers. Mr. Mondragon acknowledged that had there once been Native American resources in the APE, they have likely already been disturbed by previous construction. Mr. Mondragon and Ms. Sayers requested that if any Native American remains are encountered that the NAHC be contacted.

Built/ Architectural Resources

The HPSR prepared for the project found that the project APE includes one property (the original two bores of the Caldecott Tunnel) that is eligible for listing in the NRHP. This state-owned property was recorded and evaluated under the provisions of California Public Resources Code (PRC) Section 5024 in a Historic Resources Evaluation Report (HRER) prepared by the Department in 1995. It was concluded that the two original 1937 tunnel bores, portal buildings, and approaches appeared to meet the criteria for listing in the NRHP. The two original bores and portals of the Caldecott Tunnel are historically significant for their role in the development of the East Bay: the tunnels provided a crucial link connecting eastern Contra Costa County with Alameda County and providing a commuting route from Contra Costa County to Oakland and San Francisco, thus stimulating the rapid growth of Contra Costa County. The historic Caldecott Tunnel is also significant as an achievement of civil engineering and is associated with the work of two master designers, Henry H. Meyers and George A. Posey. This property is also eligible as a historical resource for the purposes of CEQA, using the criteria outlined in Section 5024.1 of the California Public Resources Code. The HRER noted above also determined that the third bore and associated structures, built in 1964, were not eligible for listing in the NRHP. The SHPO concurred with this finding in a letter dated April 8, 1998.

Two non-state owned parcels within the architectural history APE contain buildings or structures that were constructed less than 50 years ago. These properties are exempt from evaluation in accordance with the PA. The APE also includes six state-owned bridges. All six structures are not eligible for listing in the National Register according to the 1986 Caltrans Bridge Inventory and updates.

2.1.7.3 EFFECTS

The Department, on behalf of the FHWA, submitted a Finding of No Adverse Effect to the SHPO in February 2005. This report evaluated the potential effects of the Caldecott Tunnel Improvement Project (fourth bore) on the historic property, the original two Caldecott tunnels, portals buildings, and approaches, in accordance with the Criteria of Adverse Effect (36 CFR 800.5). In general, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The Finding of No Adverse Effect Report concluded that the undertaking, either the two-lane or three-lane north alignment alternatives, could have an effect on the historic property, but that the effect would not be adverse. The project will not result in the physical destruction, alteration, or removal of the historic Caldecott Tunnel. The setting around the historic tunnel bores and associated portals has been steadily encroached on by development since 1937, including the construction of the third bore in 1964. Although the proposed project would represent a change to the property's setting near each end of the tunnel, no physical features important to the Caldecott Tunnel's historical significance within the historic property's setting would be altered.

The SHPO concurred that the project would have no adverse effect to the historic property in March 2005 (see Appendix H). The finding of no adverse effect also satisfies the Department’s responsibilities under PRC 5024.5(a).

2.1.7.4 AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

Additional archaeological surveys will be required if project plans are changed to include previously unsurveyed areas. Due to the very low archeological sensitivity of the APE, it is the Department's position that a Native American monitor will not be necessary during construction activities. If buried cultural materials are encountered during construction, it is the Department's policy that work will stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner will be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC who will then notify the Most Likely Descendent (MLD). At this time, the person who discovers the remains would contact the Department's District 4 Office of Cultural Resources so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. Record searches conducted for the project in September 2001 and May 2004 found no historic or prehistoric archaeological sites that have been recorded within the APE or within the one-mile radius of the APE. The APE does include one property that was previously determined eligible for listing in the National Register, the Caldecott Tunnel. According to a 1995 HRER prepared by the Department, the contributing features of the historic cultural resource known as the Caldecott Tunnel include the two parallel reinforced concrete two-lane tunnels (tunnels # 1 and # 2); two portal building containing ventilation equipment as well as office, shops, and storage spaces; and the approaches for the tunnels that were completed in 1937. This property will not be affected by either the two-lane or three-lane north alignment alternatives.